Notes from June 11 Multi Material Flexible Packaging Collaborative call

- **Welcome and industry updates**
  - MRFF [ HYPERLINK "https://www.materialsrecoveryforthefuture.com/research-results/2020-research-results/" \h ] - identified end markets for mixed flexibles bale which in theory is 18% MMFP.
  - As You Sow [ HYPERLINK "https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership" \h ] makes a point that flexible packaging is a problem and chemical recycling is too far in the future to be viable so companies should switch to rigid packaging.
    - Rachel from Mars - AYS made the point that with that time frame brands are unlikely to meet their 2025 commitments. Potentially csan shorten the timeline.
  - LCAs ([ HYPERLINK "https://www.cedelft.eu/en/publications/2173/exploratory-study-on-chemical-recycling-update-2019" \h ], [ HYPERLINK "https://www.basf.com/global/en/who-we-are/sustainability/we-drive-sustainable-solutions/circular-economy/mass-balance-approach/chemcycling/lca-for-chemcycling.html" \h ]) show chemical recycling to be environmentally favorable - comparable GHG emissions to mechanical recycling.
    - Sandeep from KoolEarth- suggests we check to see these are peer reviewed
    - Tristanne - at least the BASF one is peer reviewed
  - Zero Waste Europe (ZWE) and the Rethink Plastic Alliance (RPa) [ HYPERLINK "https://bioplasticsnews.com/2020/07/15/ngo-recommendations-chemical-recycling-legislation/" \h ] says chemical recycling processes that can produce fuels are able to produce plastics but it's too far removed a step to justify calling it recycling.
  - Updated MMFR Collaborative website! We are revising the site to be more user friendly and updating some old content and also adding a new section on takeaways from our conversations on chemical recycling. Tristanne sent this out to the group a few weeks ago for feedback, please let me know if you have other comments asap.

- **Review draft chemical recycling content for website**
  - Settling on terms used:
    - Will add to website in little break out box that says 'clarifying terms': Polymer recycling (mechanical or chemical/water based purification as an add-on to mechanical recycling), Monomer recycling (not non polyolefins), Feedstock recycling (for mixed polyolefins, most relevant to us).
    - As a group we can use 'feedstock recycling' term when talking

about those technologies - i.e. pyrolysis and gasification - and other terms when talking about those other technologies, i.e. polymer recycling using chemical purification technologies. “Chemical” recycling is the broadest term and applies of all of these processes that have chemical components, but for purposes of this group, we should be clear - we are mostly talking about feedstock recycling.

  - The term *Feedstock Recovery* is used to broadly cover all of these outputs of these processes. It can be called *Feedstock* *Recycling* when its outputs are put towards non-fuel use, per [ HYPERLINK "https://www.iso.org/obp/ui/" \l "iso:std:iso:18604:ed-1:v1:en" \h ]which state “Material Recycling is defined as reprocessing, by means of a manufacturing process, of a used packaging material into a product, a component incorporated into a product, or a secondary (recycled) raw material, excluding energy recovery and the use of the product as a fuel.” Polymer manufacturers can use this output as feedstock to produce new products.

- MMFP in the Circular Economy:
  - MMFP can fit into the circular economy through an inner loop of reuse of the package, a middle loop of polymer recycling - flake or pellets go to the converter, an outer- middle loop of feedstock recycling - hydrocarbon outputs used by Material Manufacturers to produce new pellets/chemicals, and an outer loop of composting, which brings the materials back to the raw elements of nature and also feedstock recovery when used as fuels - since displaces need for virgin fuels. All of these represent opportunities for MMFP in the circular economy.

- The waste hierarchy:
  - There is a hierarchy of preference for recovery technologies based on environmental footprint and end products. Following Reduction and Reuse, the most preferable forms of recovery are Recycling (including both chemical and mechanical processes that meet [ HYPERLINK "https://www.iso.org/obp/ui/" \l "iso:std:iso:18604:ed-1:v1:en" \h ]for recycling), then followed by Composting, and Energy Recovery processes where plastics are either used as fuels or energy is used for heat/generating electricity (i.e. feedstock recovery when used as fuels), then Incineration where energy is not recovered, Landfill, and finally Litter or unmanaged waste.
  - Producers of MMFP should prioritize their recovery efforts accordingly.

- Feedstock recycling needs to be part of the solution for MMFP - list of positives/pros to put on the website (see slides)

- We also need to be transparent and express the risk factors - list of considerations to put on the website (see slides).

- Discussion:

    - Dave from Printpack - I'd like to explore the difference between designing for mechanical recycling and designing for feedstock recycling. Where do the principals overlap and diverge? There is some potential work in there - design guide for mechanical recycling, and compliment Design for Chemical Recycling ( DfCR)
- Phillip from Winpak - This is an interesting point and a good thought process. Different feedstock recycling processes may have differences in terms of which materials work best.
- Bill from Printpack - Have talked with chemical recyclers, they get different yields for different materials - depends on their process, the feedstock preference based in yield and output .
- Dana from CEFLEX- It's true that while everything designed for mechanical recycling (MR) is important to enable more and better MR, DfCR is also really relevant and needed because you can't put in any mix in any chemical process unless you talk about gasification. Can't put polyolefins and PET together. Designing structures with CR in mind also will lead to certain design choices that will maximize yield and also recovery in meaningful way.
- Sandeep - MR vs feedstock - MR wants mono material solutions versus feedstock where the entire focus is multi materials.
- Dave - this discussion points to how winners are not really picked yet on technology - the earlier we get nuances on design with the end in mind the better - as companies are investing in these technologies.Can we get info on what is preferred from CRs on feedstock and get into one place - try to define some of that ourselves?
- Laura from SPC - Some of these companies have made their purchasing criteria public.
- Rachel - love this idea - are there common themes? As brand we can say - these are 3 things that help your packaging get through any system in this market - we can look at who has put info out in the public domain.
- Tristanne - we can also talk to our winners of the FlexPack recovery Challeneg.
- Sri from Pepsi- Looking back at the schematic - we can do guidelines for each
- Shannon from Kellogg - is SPC considering other entities in the brainstorming for flexible packaging...for example recycling partnership flexible films workgroup?
- Tristanne - yes definitely, we would interview external stakeholders for this.
- Laura - if you have a person you think we should talk to let us know - to group.

- **Laura Thompson - RMS updates and perspective**

    - The RMS team has a similar way looking at this as what has been presented - if

material goes to CR facility we know some of these facilities can make either fuels or intermediate to be further processed, in RMS as fuel is not “recycling”

- How to track that - we will be testing this over next few weeks - we have finished framework standard -rapidly moving into pilot test phase for different tracking mechanisms. We have 3 mechanisms whether MR or CR - work with the whole VC - have about 12 participants.
- CR - will look at how can you prove to us through documentation that your product is making products and not fuels. This is an area we will be sure to address. Relies on sales documents, who did you sell it to and what does that company do? May look at sales agreements - will make sure they have assurance. Credibility of standard relies on this.
- Philip -What happens if product goes into chemical recycling goes into their process but the output goes to both fuels and recycled resin. How do you classify? In most processes we know today - output won’t be 100% one market or another.
- Laura - where it goes determines what it will become - may be tricky. Quality of output and tolerances - different grades go to different uses. Exactly why looking at this to make sure we feel we can track through sales data.
- Chris from Toraytpa - ISCC is a leader in Europe in helping certify circular products . [ HYPERLINK "https://www.iscc-system.org/" \h ]
- Laura- We are already using stakeholders who are already certified with ISCC under mass balance. Making sure we are aligned.
- Reviews 3 standard tracking mechanisms in RMS: 1) Average Volume, 2) Mass balance has been around for a long time but not necessarily for recycled materials. ISCC using mass balance. EMF called for more need for this. Including in our standard and super important for Chemical Recyclers. How much input is PIR versus PCR and also downstream intermediates fed into refineries, mass balance can be allocated to those also. 3) ARCs credit trading scheme - financial support mechanism. Money flows to entity processing scrap material - for each type of tracking system used have different labels and will test.
- Tristanne - asks about ARCs and different end markets.
- Laura- Materials are accounted for by resin type, i.e. a PET ARC. For intermediates i.e. pyrolysis oil - an accounting system puts in ‘equivalencies of PE’.
- Tim from Circular Matters - Does RMS distinguish between PIR and PCR?
- Laura - This is up to the brands if they want to distinguish or not - anticipate getting feedback from pilot testing. Very material specific - language ISO uses very broad language to define recycling
- Bill - Can it allow for specific percentages?
- Laura - Yes! Can choose to add this to the label.
- Tristanne - how do people get involved and what is next step?
- Laura - a few members here on the advisory group, Collaboratives and members in field testing and inviting members outside SPC also - not in packaging i.e. automotive etc

- Near term anticipate this summer doing work with brands to start getting feedback on claims- brands will be hearing from us! Once it hits the ground will be looking to get going and get certified!